

VITAL STATISTICS OF LONDON FOR 1859.
From the Registrar-General's Report, published on the 8th of March, we quote the following life statistics of London, made up from the weekly returns published during each of the fifty-two weeks of the past year. They give the following striking results:—

The natural increase of the population during 1859 was 30,939. That was the excess of the registered births over the registered deaths. Besides the increase by natural growth, London receives other accessions; every county of the United Kingdom sends its quota to the Metropolis, and the aggregate number of the immigrants, according to the best estimate, exceeded 23,000. The probable increase of the population was 54,000 in the year, or more than a thousand weekly.

There is a further movement of the population of the metropolis; the natives leave in large numbers, and are replaced by persons born in other parts; and, again, many immigrants who come to London return to their homes or wander elsewhere. The greatest migration takes place at the age twenty to thirty, when young people, unsettled, still maintain a connection with the homes of their childhood.

Of 1,394,963 inhabitants of London of the age of twenty and upwards at the last census, 749,853 were born beyond its bounds. It is a vast state, upon which the best of the population of the United Kingdom play their part, and then retire to country life, to foreign lands, or to the life beyond the grave. With the latter class only we have now to do in reviewing the diseases, the crimes, the negligences, and the accidents which have proved fatal.

The population of London in the middle of the year 1859 was probably 2,774,338; comprising about 1,299,602 males, and 1,474,736 females; for there are 175,134 more females than males. This is the result of the excess of female over male immigrants, and of the higher mortality to which men are exposed.

The number of children whose births were registered in the fifty-two weeks amounted to 92,556, of whom 47,189 were boys, and 45,367 girls. Thus the boys born exceeded the girls by 1822. The births were at the rate of 1780 weekly, 254 daily. The births exceeded by nearly 4000 the births in the previous year, and by 26,672 the births registered in 1845.

The destruction of life proceeds on the same scale of grandeur. 61,617 of the inhabitants of London died; so if the dead of a single year could be brought to life they would people a large city.

The deaths were at the rate of 1185 weekly, 31 daily. 31,141 males, and 30,476 females died. The deaths did not increase at the same rate as the births, yet their numbers have increased since 1845, when the deaths of 24,496 males and 23,836 females were registered.

Upon comparing the deaths with the estimated population it is found that to 100,000 living, 2229 died in the year; the average deaths of the last eighteen years being 2439. Thus the mortality is nearly at the rate of 22 in 1000, in lieu of 24 in 1000.

The number of births varied weekly; 1980 children, the greatest number, were registered in the fourth week of January; 1578, the least number, were registered in the last week of September. The first number is 200 above the last number 202 below, the average.

The deaths fluctuated differently; in a week of June, towards the middle of the year, they fell to 913, and in a week of October to 902, or 283 below the average; in the last week of December they rose to 1677, or 492 above the average. The reproductive force thus acts most steadily; the destructive forces having a greater range, and while they allow the mortality to subside to some extent below, raise it at intervals much above the average.

The mortality was raised above the average by the extremely cold weather of January and December; the mean temperature of the two first weeks was low (35 degrees and 39 degrees), and the deaths rose to 1338 and 1429; again the temperature fell in the two last weeks but one of December to 28 degrees, 33 degrees, and the deaths rose to 1518 and 1677 in the two weeks following.

Heat in our temperate climate also affects the mortality, and whenever the mean daily temperature rises above 60 degrees, diarrhoea and other bowel affections prove fatal to great numbers in London. Thus, in the second week of July, the mean temperature rose to 71 degrees, with a daily range of 30 degrees; the registered deaths rose to 1400 in that week, and to 1605 deaths in the week following, when the mean temperature remained the same within two degrees. The mortality rose from June, now the healthy month of London, to July, and then gradually subsided with the temperature until October, another healthy month of the year.

The effects of cold on the system appear to be direct and immediate; but the morbid processes to which they give rise, chiefly affecting the breathing apparatus, only terminate fatally after a certain number of days.

The effects of a high temperature are sometimes immediate, as is notably the case in sunstroke, or heat apoplexy, as it has been called; and as the loss of caloric by the system is greatly diminished, less of the combustible matter is consumed, so certain diseases are generated within; while others are produced by the changing organic matter in the air and water.

During the latter part of the year the chief masters and the men in the building trades of London were in a state of open war. The masters closed their establishments on the 6th of August, and afterwards only employed men who would sign a document. The men refused to the number, it was said, of 20,000. The conference of the trades societies distributed certain sums among their members; and in the sixth week as many as 14,000 of them received allowances. These allowances were, however, inadequate; the means and credit of many failed; the small shopkeepers instead of £9 or £10 took no more than £2 or £3 a week from the families of the workmen. The distress became in some cases urgent, yet the struggle was protracted through the rest of the year.

The wives evidently thought their husbands in the right, and suffered with them the pangs of hunger. A relieving officer thus writes on September 1st:—"I visited this man's lodging. He was out, but his wife was in bed, with scarcely a rag to cover her, evidently gradually sinking from want. The room contained scarcely an article of furniture, and presented a most destitute, neglected, and dirty appearance. She said, 'We are starving, sir; we have neither fire nor food.' Why, I replied, 'do not your husband go to work?' 'What,' she exclaimed with considerable energy, 'to become worse than a slave!'"

This distress produced ultimately a sensible effect on the mortality of the men and their children. As long as the weather was broad, the poor children, however, apparently had it; until, unaccounted, cold, ill-clad, they at last died in unusual numbers as the severe weather came on towards the close of the year.

In recording the fatal results of this conflict we must regret its origin, and express a hope that for the future a better understanding and a more friendly relation will subsist between masters and men.

The mortality in 110,000 living was at the rate of 2229 deaths from all causes, of which 592 were by diseases of the zymotic class. It may be instructive to compare the fatality by some of the diseases of London now and in the seventeenth century. In the twenty years 1660-79 the mortality in Southwark and in the city within and without the walls was at the rate of 7 or 8 per cent., so the mortality within the bills may be set down at the rate of 7000 annually in every 100,000 living, of which 3400 were by zymotic diseases.

The diseases were not always distinguished accurately. But by putting them in groups, any fallacy from this source will be obviated, and the decrease of some of the worst forms of mortal disease will be placed beyond doubt. To render the comparison easy, the number living is taken to be the same in the two periods 100,000 in 1660-79, and in 1859. The annual deaths by small-pox were 357 in the first period, 42 in the second period; by measles 406 and 47 in the two periods. Medical science was imperfect, and the science existing in that century was very imperfectly applied. Croup and scarlatina were not generally recognised, but were confounded with measles and fever. The mortality by fever, continued or remittent, and ague was at the rate of 749 and 59 in the two periods; or including scarlatina, quinsy, and croup, the mortality was 759 and 227. Thus a person was in four times as much danger of dying of these diseases at the Restoration as a person living in London now.

Whooping-cough, London now, is a peril in childhood; the mortality by that disease is now 17, it was then 86. Again, a few (eight) in 100,000 die now of dysentery; then, out of the same number, 763 died annually of that disease. By diarrhoea, a milder form of disease, 11 died then, 120 die now; cholera was fatal in 1859, to seven; and in twenty years (1660-79) to 130 annually. Syphilis was twice as fatal as it is, the numbers being 21 and 12. Scoury and purpura bear testimony to the imperfect nutrition of the population; the annual deaths were then 142, and are now 20. Vegetables, fruit, and fresh meat, could with difficulty be procured in winter. Worms and all parasitic creatures that crawl over, bite, and prey on the body of man, were prevalent; ten deaths were ascribed to worms.

Dropsy, a result and sign of scoury and fever, was exceedingly fatal: 298 died of that disease then, and 26 now. Apoplexy, paralysis, epilepsy, affections of the brain and suicide, are more fatal now, according to the returns, than they were, in the proportion of 57 then to 151 now.

Consumption and diseases of the breathing organs were uncommonly fatal; 1079 then and 611 now are the figures of the mortality. Diseases of the digestive organs were fatal then and now in the proportion of 146 and 95. Stone and diseases of the urinary organs are now as fatal as they were then; the deaths being 21 and 30. Children were rapidly cut down; of convulsions and teething 1175 died then, 136—two many now.

Of the violent deaths, some are now more frequent, as the forces by which they are occasioned are greater: of fractures and wounds 19 died then, 25 now; of poison, more accessible, 2 now and then only 1; of burns, as fires are probably more common, and dresses more inflammable, now 13, then 3; drowning and suffocation were then twice as fatal (28 and 20) as they are (10 and 10) in the present day. 5 in 100,000 of the people were executed then annually; now 1 in the whole population.

In addition, the inhabitants of London were then destroyed by the terrible plague; which, upon an average of the twenty years, carried off 1132 lives.

In 1665 nearly a third of the population perished by plague. It is difficult to conceive this frightful destruction of human life; the imagination, the wailing notes of writers, the details of Defoe in a work which would have immortalised any writer, fail to bring all the horrors before our minds.

The mortality was at the rate of seven per cent. on an average during the twenty years. If the mortality of London had been at the same rate, the last week of 1859, instead of 61,617 about 104,204 deaths would have been registered. The plague was thus more appalling as the mortality overwhelmed the people in particular years; thus the burials from 15,356 in 1663 rose to 27,906, "whereof 68,596 were by plague," in 1665; and this was equivalent to more than 600,000 deaths by plague in the present population of London. In the third week of September, 8297 deaths were registered, which represents a rate of mortality equivalent to about 85,000 deaths in a week on the actual population of London.

In these recurring plagues vast numbers of people died in panic terror from the fatal city; servants and workpeople were discharged in great numbers; commerce was paralyzed; few ships ventured up the river, and merchant vessels were occupied by their owners as asylums on the water. Sextons, gravediggers, bearers, bellmen, and drivers of death-carts were in demand. The dead were hurried indiscriminately to some bodies lay in forsaken houses, others across the paths in the streets, no longer traversed by carts or coaches. At the end of the summer, grass was growing in Bishopsgate-street and Cornhill, where the people thronged no longer. The loud voices, shrieks, and sobs of the delirious, the desolate, and the dying were heard in the streets; at times too, disturbed by reckless revellers, and by raving patients, who had escaped from their dwellings, converted into prisons. For according to the regulations "infected houses" were shut up; a red cross and "Lord have mercy upon us" were inscribed on their portals; while watchmen jealously guarded the doors. These quarantine regulations were at first rigidly carried out, and were only gradually abandoned when they were found useless, pernicious, and impracticable.

It is of some use to ask whether these past occurrences possess merely a historical interest for the inhabitants of London. Are the diseases of those times ever likely to recur? The answer must be, undoubtedly they will recur, if their cause be not again into action; and not otherwise. If a comet, if the stars, if volcanic action—if some mystical telluric influence destroyed the population of London at the rate of seven per cent. annually, and at times in paroxysms at the rate of twenty and thirty per cent. in a single year, such powers are evidently beyond the reach of the will, and of all human effort. The population must resign itself to its fate. Vesuvius may, perhaps, be extinguished artificially, but the cause of the volcanic action which pervades the world is inaccessible.

All the evidence, however, goes to show that comets, stars, and volcanic action had as much to do with the mortality of the population of London in the seventeenth century as with the mortality of the British troops in the Crimea; and no more. The supply of food, and parti-

cularly of vegetable and fresh animal food, in certain seasons of the year, was defective, so that a large portion of the population became scorbutic. The houses were nearly as close and dirty as the houses now are in Constantinople and Cairo; the water supply was imperfect, as London Bridge works and Hugh Middleton's New River were for many years unappreciated. Water has in itself little attraction for people unaccustomed to abstinence. Parasitic insects and diseases of the skin betrayed its impurities. The dirt of the houses struck foreigners. The sewers were imperfect; and the soil gave off marsh miasma in some parts, and in others was saturated with the filth of successive generations.

The high rates of mortality which then prevailed still attend cholera and current epidemics in certain localities. The nature of disease and the climate are still the same as they were in London before the Revolution; and it is evident that if plague had disappeared, other zymotic diseases, but notably dysentery, scurvy, and fever have declined. Cholera was on an average then as fatal as it has been recently, and probably much more fatal than it will be again if London be supplied with pure water.

The nation exists justly in the progress of its manufactures. But the progress of its manufactures is surpassed by the progress of the health of its capital.

The improvement in the health of London has proceeded step by step with the amendment of the dietary, the drainage of the soil on which the houses stand, the purification of the water which the people drink; with the sweetening of the air; and with the progress of medical science, which is the source of sound sanitary doctrines.

So long as these improvements are maintained, the diseases of the seventeenth century will not recur; and all further progress is in the hands of the people. They can work out their own salvation, with God's blessing. The causes of disease are numerous; but every one that has hitherto been discovered can be to a certain extent controlled. If by persevering in the exact observation and analysis of the diseases of the population, science succeeds in bringing to light the evils of unnatural diseases still existing, we may hope confidently that those evils will be averted; and that, rising from the Thames, the site of London, which was pronounced in the seventeenth century a field of blood and terror, will be a field of health, concourse, and security to the population of the metropolis of the empire.

SIR ROBERT PEEL ON THE VOLUNTEERS.

MR. SIDNEY HERBERT having moved the Army Estimates, Sir Robert Peel said that he rose for the purpose of entering a serious protest against the enormous extravagance of our public expenditure. The sum which England and France yearly expended for naval expenses amounted to one-half of their national incomes. It was too bad, in a time of peace, to ask the House for such an enormous addition. (Hear, hear.) Up to the year 1860, it was constantly affirmed that the country was in a most efficient state. The right hon. gentleman had told them he was not going to take a vote for the yeomanry this year—the yeomanry, that ancient force to which he had the honour to belong. (A laugh.) But the right hon. gentleman also told them he was going to take £58,000 for adjutants and forage, and matters of that sort. This was considerable, but then volunteers would cost them ten times more for rifles and artillery, and perhaps £300,000 would be somewhat nearer the mark. In this way, instead of increasing the regular forces of the country, the right hon. gentleman was recruiting amongst the country attorneys and easy-going provincials, with, as the right hon. gentleman told them, a loose sort of drill. Very loose he dared say it was. He had the utmost contempt for it. (Opposition cheers.) In 1804 the volunteer corps cost the country a million, and Mr. Pitt subsequently came down and asked for another £500,000. Let them take care that a similar result did not occur now; let them see that their volunteers did not cost the country more than they were worth. He had a few days before met a stout friend of his (a laugh) and he said, "You a Volunteer Rifleman? I think you're rather stout." "Not at all," was the reply, "it's capital fun." Fun! Why he (Sir R. Peel) had seen in Switzerland the Volunteers creeping on their bellies through hedges for miles. (Loud laughter.) He recollected during the war of the Sonderbund being out with the Fribourg Volunteers, and they passed a whole night in trees. (Continued laughter.) This was what his stout friend called "capital fun." (Great laughter.) But then he asked his friend about his fun, and the answer was—lunches; an annual full dress ball for the girls; and an expensive band. In fact, conviviality seemed to be completely the rule with the patriotic army. (Hear, hear.) What he said was, if there was any increase in the regular army and navy. He believed that neither the Commander-in-Chief in England nor the Commander-in-Chief in Scotland were willing to train these men, and he honoured the latter for the fearless way in which he had spoken out on the subject. He saw that he was no longer Commander-in-Chief in Scotland, and if his removal had any connection with the manner in which a noble lord had attacked him in his absence, he thought that that noble lord was not only a true patriot but a military commander of high distinction. Lord Grey had advocated the volunteers because, as he said, it was a non-military movement; and he asked was not such a reason unworthy of him in the noble lord's position? Lord Derby had, in 1852, declined in a mainly way to be a party in the humbug, with the volunteers, which came out at these volunteer meetings. At Melton-Mowbray the Chairman said—"The time has come when every Englishman will be found employing his leisure in practising with his rifle." Another gentleman proposed a fox-hunting corps, on the ground that the French dragoons or cuirassiers would not be able to follow them. There was a meeting at Stockwell, at a place called the Swan—a laugh—an inn, he supposed, in which Mr. Seymour said—he hoped it was not his friend Mr. Danby Seymour—"The movement was a sort of millennium." He (Sir R. Peel) hoped it was not going to last so long. "It was a millennium; the force now numbered 400,000, and in a few days would reach a million." (Laughter.) It was to be hoped that the right hon. gentleman did not mean to give them all rifles at £10 a piece. (Hear, hear.) Then there was another corps called the Pimlico Fencibles. (Loud laughter.) Then the Chairman fixed the numbers at 150,000, whilst the Times set them down at double what they had been three months before, namely, 22,000. Such was the way in which the excitement was got up. And, other large and influential meetings were held at Eye, and a gentleman, carried away by his enthusiasm at this meeting of Suffolk yokels

and bumpkins—(loud laughter)—said, "Do you know that there are 100,000 men on the other side of the Channel waiting to come across, and every Frenchman, whether soldier, sailor, or peasant, believes that there is to be an immediate invasion of this country." Similar speeches were made at Pimlico, and all this while the right hon. gentleman was asking for ten millions for national defences. He should like to see the youth of the country engaged in some manly, useful pursuit, instead of tinkering after knickerbockers and such nonsense. (Renewed laughter.) But the climax occurred at a meeting of the Pimlico Fencibles, where Mr. Deane reminded the meeting that in 1797, 1400 Frenchmen landed in Pembrokeshire, and were frightened off by the red petticoats of the Welsh women—not a very flattering allusion to the Pimlico Fencibles—but, he added, Mr. Fox said that England did not recover the effects of that descent for twenty years." (A laugh.) He believed that some of these gentlemen were going mad. There were the Westminster Guards, modelled on the Potsdam Grenadiers of Frederick William of Prussia, the Stokers and Pokers of the Railway Rifles, with other titles equally ridiculous, not forgetting the Westminster Volunteers of St. John the Evangelist. (Loud laughter.) What in the world had St. John the Evangelist to do with a volunteer corps. (Continued laughter.) Next, there was the volunteer corps of the aldermen and corporation of London; and last, not least, the volunteers of the Inns of Court. He certainly admired the patriotism of the lawyers, but he feared they would not do much against the cuirassiers of the Imperial Guard. There was Sergeant—soon to be a Major—Parry, Dr. Ball, and his friend Mr. Boddie. They were devoting "Amrose's Reports," and "Coke upon Lytton," for "Plutarch's Lives," and "The Rifle, and how to use it." He would recommend them to stay at home and recollect the maxim—"In medio tutissimus ibi," which, being freely translated, may be interpreted to mean "You are a good deal safer in the Middle Temple." (Rounds of laughter.) He understood that was the intention of the right hon. gentleman to give rifles to all these gentlemen; and the other day General Hay, addressing a body of rifle volunteers, told them that the French troops, as compared with them, were mere skirmishers, complimented them upon the accuracy of their shooting, and told them they were really becoming too expert. One of these gentlemen had explained the reason of his efficiency. He said, "Oh, it's the easiest thing possible; I live in London, it is true, but I amuse myself by shooting at the cats of my Brompton neighbours." (Laughter.)

He (Sir Robert Peel) said that was all very well the dead time of the year, but conceive what it would be in the height of the season in London (laughter) and everybody shooting at his neighbour's cats. (Laughter.) What would be the consequence of putting rifles in the hands of the Pimlico Fencibles and the filibusters of Finsbury? Why there would be no end of disturbance. One gentleman, in order to get up the excitement, proposed that there should be a rifle Derby—just as we had an Epsom Derby and Oaks, that there should be a rifle Derby meeting on Epsom Downs, with Dording's correct cars. (Laughter.) This was not the way to deal with this subject. (Ironical cheers.) This was not the way to treat the matter if any real danger were to be apprehended to this country. (Hear.) He had followed this movement from its commencement; and he was satisfied if it were so useful, the Royal family would be found backing up the movement among the people. But he believed that beyond giving patronage to a solitary country ball, they had given the movement no encouragement. He entirely disapproved of this sort of thing. He had hoped the time had come when the Government would have made a manly stand against this dribbling of the resources of the country. (Hear, hear.) He did not say he entirely disapproved of it, he did not doubt it might be very useful; but he conceived that a few handfuls of men added to the regular army, and properly trained and disciplined, would be ten times more valuable than any support that could be obtained from railway rifles and Finsbury filibusters. (Hear, hear.)

In reference to the above, the London correspondent of the Leeds Mercury says:—"The next episode which enlivened the House was of less political importance, perhaps, but productive of wild mirth, which turned the arena of legislation into a place of dramatic entertainment, in which a screaming farce was enacted by the funny young gentleman—Sir Robert Peel. A joke is a capital thing, but it is a dangerous matter for a man to make a capital of his jokes, for the House—as in the case of Sibthorp and one or two others—when once the name has been earned of a farceur, and the exhibition of the cap and bells has been made for a few times, rejects all attempts which may be made at serious speaking, and let the sense be ever so sound, will turn his own weapon—the laugh—against him, to parry with it. It should be, from my experience, one of the rocks (had he the ability to ever get to the bottom of this) which should steer clear of the danger of fun is altogether as acceptable on this point as the merrymen. He is got up regardless of expense, very eloquently, usually wearing an exotic in his button-hole, which in the parody turns to a full-blown rose. He has a personality for an umbrella of the slim character which Punch's artist usually places in the hands of his peg-top exquisites. He is rosy and jocund of visage, and best requisite of all in the funny line, he has the habit of changing the r to an s, which has a very sedulous effect. It is, of course, less remarkable, or remarked, in the House of Commons, where there are many others that have, or affect his peculiar droll; but it is a great drawback in addressing a public and miscellaneous meeting—as I have witnessed in Sir Robert's case—where the multitude, and a consequent propensity to lay hold of weak points. The House delivered itself up bodily to the enjoyment of the speech the more so as the style is becoming rare. He did no damage to the rifle corps movement.

An enormous yield of gold from Johnson's Reef is reported by the Sydney Advertiser. That journal states:—"The following remarkable results took place on Thursday, the 24th instant, at the Perseverance Co.'s machine, Long Gully: 1st. From Lindsey and Taylor's claim, half a ton of silver yielded 296 ounces, besides a specimen containing 5 ounces of gold, making a total of 304 ounces, or 958 ounces of the ton. 2nd. From the same claim, at a further depth of twenty feet, being a distinct reef from the former, five tons and 228 ounces, 3rd. From Thorpe and Co.'s claim, twenty-two tons and 113 ounces.

A Chinaman was detected at Ballarat, on Thursday, in an endeavour to sell the extraordinary small quantity of silverware of gold, and that, too, spurious! He was given into custody.

EXTRACTION OF GOLD FROM QUARTZ.

(From the Argus, May 24.)

A LECTURE was delivered yesterday evening at the Mechanics' Institution by Mr. Wilkinson, on the subject of extracting gold from quartz. The chair was occupied by the Mayor of Melbourne. There were about eighty persons present.

The lecturer commenced his address by stating that he had been requested to read a paper explanatory of his process of extracting the gold before the Royal Society, and he had partially complied with the request, but he had been asked to deliver the lecture to the general public. He then proceeded to state that he did not desire to tax the imagination of his audience by speculative theories, but to deal with facts, and as much as possible on a commercial point of view.

Having briefly glanced at the usual methods of extracting the gold by the Chilian mill and stamping operations, he observed that although these processes might return a profitable interest for the capital employed in them, yet the loss of the precious metal was very great. The natural form in which gold is found is thin and leafy; and in some quartz it was so remarkably fine, that without the aid of a magnifying glass it was not discernible; and it was so incorporated with the stone, that unless both were reduced to powder, the gold could not be extricated. The power employed to crush raw quartz was however so great, that it cut up the gold into small particles that the dense new luster, and much of it was lost away as a natural result, and what did go to the mercury went with other metals and their oxides, which partially interfered with its action on the gold. By the ordinary process of calcination, some of these particles were lost, and other qualities escaped to the other hand, others were increased. Besides the mercury, there were other methods of precipitating gold from quartz, but these were so expensive in their operations, that they were more fitted for the laboratory than for the general use. Mr. Wilkinson then stated, that in comparison with the present methods, he would draw their attention to a process which he himself had adopted, and which, so far as his judgment was concerned, he believed to be the most economical and profitable view than any of the methods he had referred to. In explaining it he drew attention to a diagram that he showed to the audience. He then stated—"Here is a furnace or retort, in which charcoal is put, and this retort forms the bridge for the fireplaces for generating steam. The upper part of the heat is given to the boiler; at the same time the retort receives sufficient from the lower part of the fire for the required purpose. From the top of the boiler is a tube, connected with the retort, through which passes rarified steam. This enters the retort at one end, and leaves it at the other, through another tube, on its passage which exits in the furnace. The steam, passing by these means, is converted into two gases. The oxygen is absorbed by the charcoal, having a great affinity for it, and the hydrogen is liberated. These pass off from the retort in the way already described. The quartz is taken in a tube, the quartz by different jets from the furnace, so as to give an equal supply to the quartz. I have also driven, by the engine, a small fan, the tube from which is of sufficient capacity to give an equivalent blast of air to the quartz, and the steam, which saturates the first part of the process, and when a sufficient heat is thereby obtained or given to the quartz, the fan is stopped, and the gases are allowed to pass freely and alone amongst the quartz in the furnace. The quartz, heated by these means, is converted into two gases. The oxygen is absorbed by the charcoal, having a great affinity for it, and the hydrogen is liberated. These pass off from the retort in the way already described. The quartz is taken in a tube, the quartz by different jets from the furnace, so as to give an equal supply to the quartz. 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BAKER BY AUCTION.

ON FRIDAY, the 1st of June, at 11 o'clock precisely.

Very Superior Household Furniture
Resealed Piano-fortes
Engraving, Plated Ware, &c., &c.; also
Household Linens, &c., &c., and a variety of useful
Household Requisites.

* The Property of a Gentleman removing into the Interior.

MR. ROBERT MURIEL has received instructions from J. Currie, Esq., who is about returning to his native country, to sell by public auction, at the Rooms, Wynyard-street, THIS DAY, the 1st of June, at 11 o'clock precisely.

The whole of his very superior household furniture, comprising—

Dining and drawing-room furniture
Resealed piano-fortes
Large pier glass, cut glass chandelier
Occasional and other tables, oil paintings, engravings
Watercolor, chests of drawers, chiffoniers
Bookcase and credenza, washstands and furniture
Single and double iron bedsteads, travel horse
Feather beds and pillows, dressing tables and glassware
Chairs, tables, and a variety of sundries too numerous to particularise. Also,
Russell cooking stove and kitchen range.

Terms, cash.

Preliminary Notice.

Chemicals, Drugs, Fruit Reesons
Surgical Instruments, Dressing's Utensils
Sewing Pins, Measurers, &c.
Beaver's Water Colours, Drawing Requisites
Mathematical Instruments
Drawing and Tracing Paper and Cloth, &c.

FRITH and PAYTEN will sell at the Sydney Auction Rooms, on MONDAY, the 4th instant, at 11 o'clock.

Several parcels of the above goods, without reserve. Particulars in a future issue.

Large Unreserved Sale Books and Show. 60 Trucks, or less arrivals.

To the Trade and Country Buyers.

FRITH and PAYTEN will sell at the Sydney Auction Rooms, on TUESDAY, 5th June.

The above parcels of books and show, to close consignments for the mail.

Particulars in a future issue.

TUESDAY'S Drapery Sale.

TUESDAY, 5th June.

On account of whom it may concern.

Ex Wansell, Jones, Master, from Liverpool.

CHATTO and HUGHES have received instructions to sell by auction, at the Treasury Auction Rooms, on TUESDAY, 5th June, at 11 o'clock.

Ex Wansell, Jones, master, from Liverpool.

J.P. over 8 is square—

75-1 ditto 1 case containing 19 pieces of muslin, slightly damaged by sea water.

76-1 ditto 250 ditto ditto, much ditto ditto ditto

77-1 ditto 31 pieces of muslin, slightly ditto ditto

78-1 ditto 34 pieces of muslin, slightly ditto ditto

79-1 ditto 34 pieces of muslin, slightly ditto ditto

80-1 ditto 34 pieces of muslin, slightly ditto ditto

81-1 ditto 34 pieces of muslin, slightly ditto ditto

82-1 ditto 34 pieces of muslin, slightly ditto ditto

83-1 ditto 34 pieces of muslin, slightly ditto ditto

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116-1 ditto 34 pieces of muslin, slightly ditto ditto

117-1 ditto 34 pieces of muslin, slightly ditto ditto

Treasury Auction Rooms.

FRIDAY, 1st June.

Important Sale of Ironmongery.

On account of whom it may concern.

Ex Waterson, Young, from London.

CHATTO and HUGHES have received instructions to sell by auction, at the Treasury Auction Rooms, THIS DAY, 1st June, at 11 o'clock.

On account of whom it may concern.

Over 11, 1600—Cask, containing

100 sets of ironmongery, in cask

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GREAT SALE OF DAMAGED GOODS,

at the Bank Auction Rooms, THIS DAY, Friday, June 1, 1860, to commence at 10 o'clock precisely.

Woolen Goods, General Quilts, Drapery, &c., &c.

On account of whom it may concern.

Ex Waterson, Young, from London.

CHATTO and HUGHES have received instructions to sell by auction, at the Bank Auction Rooms, THIS DAY, Friday, June 1, 1860, to commence at 10 o'clock precisely.

On account of whom it may concern.

Ex Waterson, Young, from London.

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Damaged Assorted Goods.

To Grocers, Storekeepers, and others.

JOHN G. COHEN will sell, at the Bank Auction Rooms, THIS DAY, June 1, 1860, at 10 o'clock precisely.

On account of whom it may concern.

Ex Waterson, Young, from London.

CHATTO and HUGHES have received instructions to sell by auction, at the Bank Auction Rooms, THIS DAY, June 1, 1860, at 10 o'clock precisely.

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